

ABSTRACT

[0047] An apparatus for collecting biological aerosols from an air sample is provided comprising an air intake assembly adapted to draw the air sample into the apparatus, a separation section coupled to the intake assembly and adapted to separate aerosol particles from the air sample, a capture section coupled to the separation section and adapted to transport the aerosol particles in a stream of liquid, and a hydrophobic membrane disposed between the separation section and the capture section and adapted to establish a controllable air/fluid boundary therebetween. Further embodiments of the apparatus comprise an air intake assembly adapted to draw the air sample into the apparatus, a separation section coupled to the intake assembly and adapted to separate aerosol particles from the air sample, a capture section coupled to the separation section and adapted to transport the aerosol particles in a stream of liquid, and a corona charging section disposed between the separation section and the capture section and adapted to focus the aerosol particles into the stream of liquid.